

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

- 1-16. (Canceled)
17. (New) A method for determining imaging characteristics of an object, the method comprising:
- casting incident light in a linear shape from one light source onto a specific location on an object;
 - capturing detected light with one image sensor while casting the incident light, the detected light including at least (i) light from reflection of the incident light, and (ii) light from scattering of the incident light;
 - generating a record associated with the specific location from the detected light, the record including at least (i) first information about the reflection of the incident light, and (ii) second information about the scattering of the incident light; and
 - determining an object profile for the specific location and an object scattering property for the specific location by reading the first and second information in the record associated with the specific location.
18. (New) The method of claim 17, wherein generating the record comprises forming a first image from the captured light.
19. (New) The method of claim 17, wherein:
- the light source is a laser forming a line of laser light on the object;
 - the first image contains a profile corresponding to the line of laser light on the object;

- 5 the object profile is determined using the profile in the first image; and
 the object scattering property is determined using an intensity distribution of the
 profile in the first image.
20. (New) The method of claim 19, wherein determining the object scattering
 property comprises:
 identifying a middle area and an edge area in the intensity distribution; and
 comparing an intensity in the edge area with at least an intensity in the middle
5 area.
21. (New) The method of claim 18, wherein generating the record further comprises
 processing the first image to generate a second image having a reduced data quantity
 compared to the first image.
22. (New) The method of claim 21, wherein the first image includes image
 information distributed in rows and columns that represents at least part of the linear
 shape, and wherein the method further comprises:
 (i) successively selecting respective subsets of the rows;
5 (ii) for each row in each of the subsets, determining whether the row's portion of
 the image information meets a criterion, and if so registering in the record any of the
 columns where the criterion is exceeded; and
 (iii) generating a representative row for each of the subsets using the image
 information of the rows in the respective subset, the second image formed by the
10 representative rows and containing a version of the linear shape of the incident light.
23. (New) The method of claim 22, wherein generating each representative row
 comprises:
 processing the portion of the image information of each row in the subset; and
 detecting, while processing, whether a sum of added image information for any of
5 the columns exceeds the criterion.

24. (New) The method of claim 23, wherein the processing comprises summing the portion of the image information of each row in the subset.
25. (New) The method of claim 23, wherein the processing comprises performing a max operation on the portion of the image information of each row in the subset.
26. (New) The method of claim 17, wherein the object is elongate in one direction essentially perpendicular to the linear shape of the incident light.
27. (New) The method of claim 17, wherein at least one of the light source and the object is moving while the incident light is cast and the detected light is captured.
28. (New) A system comprising:
 - one light source casting incident light in a linear shape onto a specific location on an object;
 - one image sensor capturing detected light while the incident light is being cast, the detected light including at least (i) light from reflection of the incident light, and (ii) light from scattering of the incident light; and
 - an image-processing unit generating a record associated with the specific location from the detected light, the record including at least (i) first information about the reflection of the incident light, and (ii) second information about the scattering of the incident light;
 - wherein the image-processing unit determines an object profile for the specific location and an object scattering property for the specific location by reading the first and second information in the record associated with the specific location.
29. (New) The system of claim 28, wherein the record comprises a first image formed from the captured light.
30. (New) The system of claim 29, wherein:
 - the light source is a laser forming a line of laser light on the object;
 - the first image contains a profile corresponding to the line of laser light on the

object;

- 5 the object profile is determined using the profile in the first image; and
 the object scattering property is determined using an intensity distribution of the
profile in the first image.

31. (New) The system of claim 29, wherein the image-processing unit determines the
object scattering property by:

 identifying a middle area and an edge area in the intensity distribution; and
 comparing an intensity in the edge area with at least an intensity in the middle

- 5 area.

32. (New) The system of claim 29, wherein the image-processing unit generates the
record by processing the first image to generate a second image having a reduced data
quantity compared to the first image.

33. (New) The system of claim 32, wherein the first image includes image
information distributed in rows and columns that represents at least part of the linear
shape, and wherein the image-processing unit further:

 (i) successively selects respective subsets of the rows;

- 5 (ii) for each row in each of the subsets, determines whether the row's portion of
the image information meets a criterion, and if so registers in the record any of the
columns where the criterion is exceeded; and

- (iii) generates a representative row for each of the subsets using the image
information of the rows in the respective subset, the second image formed by the
10 representative rows and containing a version of the linear shape of the incident light.

34. (New) The system of claim 33, wherein in generating each representative row the
image-processing unit:

 processes the portion of the image information of each row in the subset; and

- detects, while processing the portion of the image information of each row in the
5 subset, whether a sum of added image information for any of the columns exceeds the
criterion.

35. (New) The system of claim 34, wherein the image-processing unit sums the portion of the image information of each row in the subset.
36. (New) The system of claim 34, wherein the image-processing unit performs a max operation on the portion of the image information of each row in the subset.
37. (New) The system of claim 28, wherein the object is elongate in one direction essentially perpendicular to the linear shape of the incident light.
38. (New) The system of claim 28, wherein at least one of the light source and the object is moving while the light source casts the incident light and the image sensor captures the detected light.